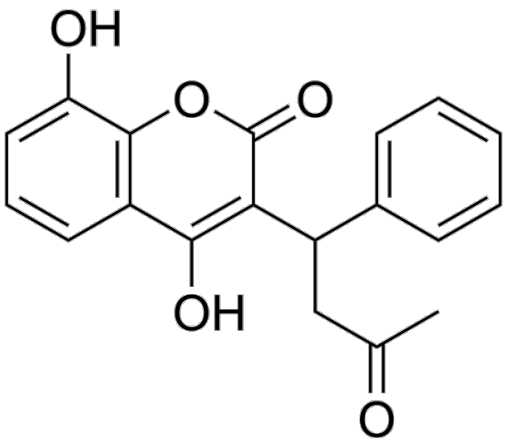
Product Data Sheet

Product Name: 8-Hydroxywarfarin
Cat. No.: GC79587

Chemical Properties

Cas. No.	17834-04-7		
Formula	$C_{19}H_{16}O_5$	M.Wt	324.33
Solubility		Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

8-Hydroxywarfarin (8-OH Warfarin) is a CYP2C9 inhibitor. 8-Hydroxywarfarin inactivates the anticoagulant activity of Warfarin via 8-hydroxylation. 8-Hydroxywarfarin serves as a glucuronidation substrate for UGT1A1, UGT1A8, UGT1A9, as well as wild-type/mutant UGT1A10. This reaction enhances its polarity, solubility and excretion efficiency, and the process is independent of phenylalanine 90 of UGT1A10. 8-Hydroxywarfarin can be used in studies related to thromboembolic diseases [1] [2].

Caution: Product has not been fully validated for medical applications. For research use only.
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In Vitro, 8-Hydroxywarfarin (750 μM; 90 min) is glucuronidated by recombinant wild-type UGT1A10 and its UGT1A10F90A, UGT1A10F93A, and UGT1A10V92A mutants expressed in baculovirus-infected Sf9 insect cells at specific activities of 20, 20, 50, and 183 nmol/min/mg protein, respectively[1]. 8-Hydroxywarfarin (100-2000 μM; 90 min) is glucuronidated via Michaelis-Menten kinetics by recombinant wild-type UGT1A10 and its UGT1A10F90A, UGT1A10V92A, and UGT1A10F93A mutants expressed in baculovirus-infected Sf9 insect cells, with Vmax values of 25, 18, 260, and 69 nmol/min/mg protein and Km values of 390, 190, 390, and 304 μM, respectively[1]. 8-Hydroxywarfarin (250 μM; 90 min) glucuronidation by recombinant wild-type UGT1A10 and its F90A, V92A, and F93A mutants expressed in baculovirus-infected Sf9 insect cells is competitively inhibited by Warfarin, 6-hydroxywarfarin, and 7-hydroxywarfarin, with Ki values ranging from 300 μM to ≥1500 μM depending on the inhibitor and enzyme variant[1]. 8-Hydroxywarfarin (750 μM; 180 min) is metabolized to an identical 8-O-glucuronide metabolite by recombinant wild-type UGT1A10 and its UGT1A10F90A, UGT1A10V92A, and UGT1A10F93A mutants expressed in baculovirus-infected Sf9 insect cells, as confirmed by LC-MS/MS analysis[1]. 8-Hydroxywarfarin (750 μM; up to 180 min) is catalyzed for glucuronidation in vitro by UGT1A1, UGT1A3, UGT1A8, UGT1A9, and UGT1A10, with UGT1A10 exhibiting the highest activity (>0.6 μM/mg protein/min) at a substrate concentration of 750 μM[2]. 8-Hydroxywarfarin (100-2000 μM; 90 min) is catalyzed for glucuronidation in vitro by UGT1A8, UGT1A9, and UGT1A10 with defined Michaelis-Menten kinetic parameters, where UGT1A10 exhibits the highest catalytic efficiency (Vmax/Km = 2.3 ×10-3 min-1 mg-1 protein)[2]. 8-Hydroxywarfarin is glucuronidated by human UGTs in vitro, forming a conjugate confirmed via LC-MS/MS with characteristic mass spectral fragments[2]. 8-Hydroxywarfarin (100 μM; 60 min) significantly inhibits recombinant human CYP2C9-mediated 6-hydroxylation of (S)-warfarin in vitro by approximately 85%[2].

References:

[1]. Miller GP, et al. Identification of hydroxywarfarin binding site in human UDP glucuronosyltransferase 1a10: phenylalanine90 is crucial for the glucuronidation of 6- and 7-hydroxywarfarin but not 8-hydroxywarfarin. Drug Metab Dispos. 2008 Nov;36(11):2211-8.
[2]. Zielinska A, et al. Glucuronidation of monohydroxylated warfarin metabolites by human liver microsomes and human recombinant UDP-glucuronosyltransferases. The Journal of pharmacology and experimental therapeutics. 2008 Jan;324(1):139-48.

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